Effective Remote Execution on Remote Resources

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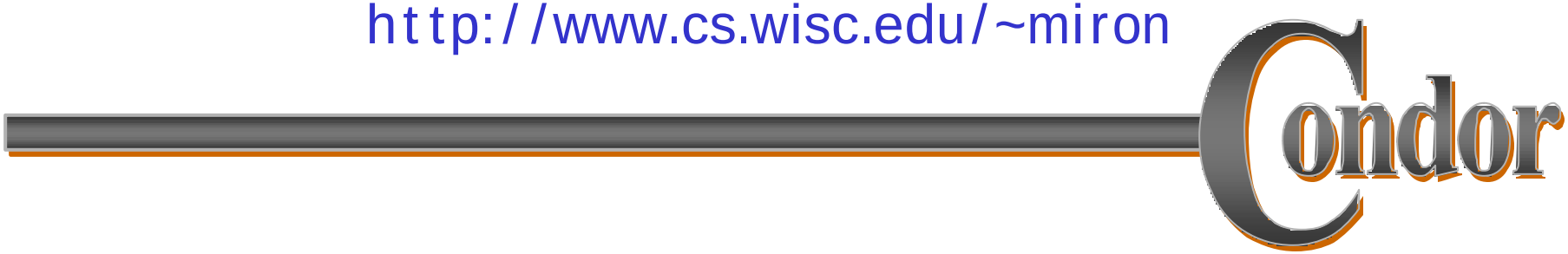
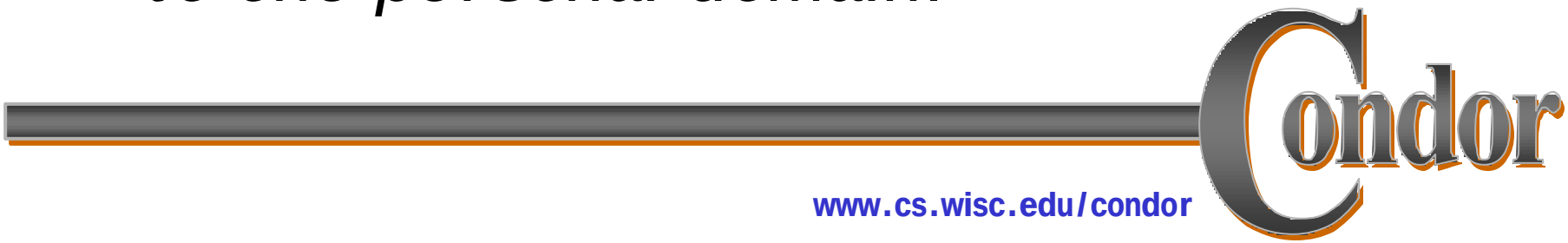


Requirements

- Reliable Job Management services on the submitting system **(Condor-G)**
- Make Job "feel at home" on remote system **(JAVA Universe and Glide-in)**
- Reliable flow of information and control between the two systems **(GRAM 1.5 and Grid Console)**

Condor-G

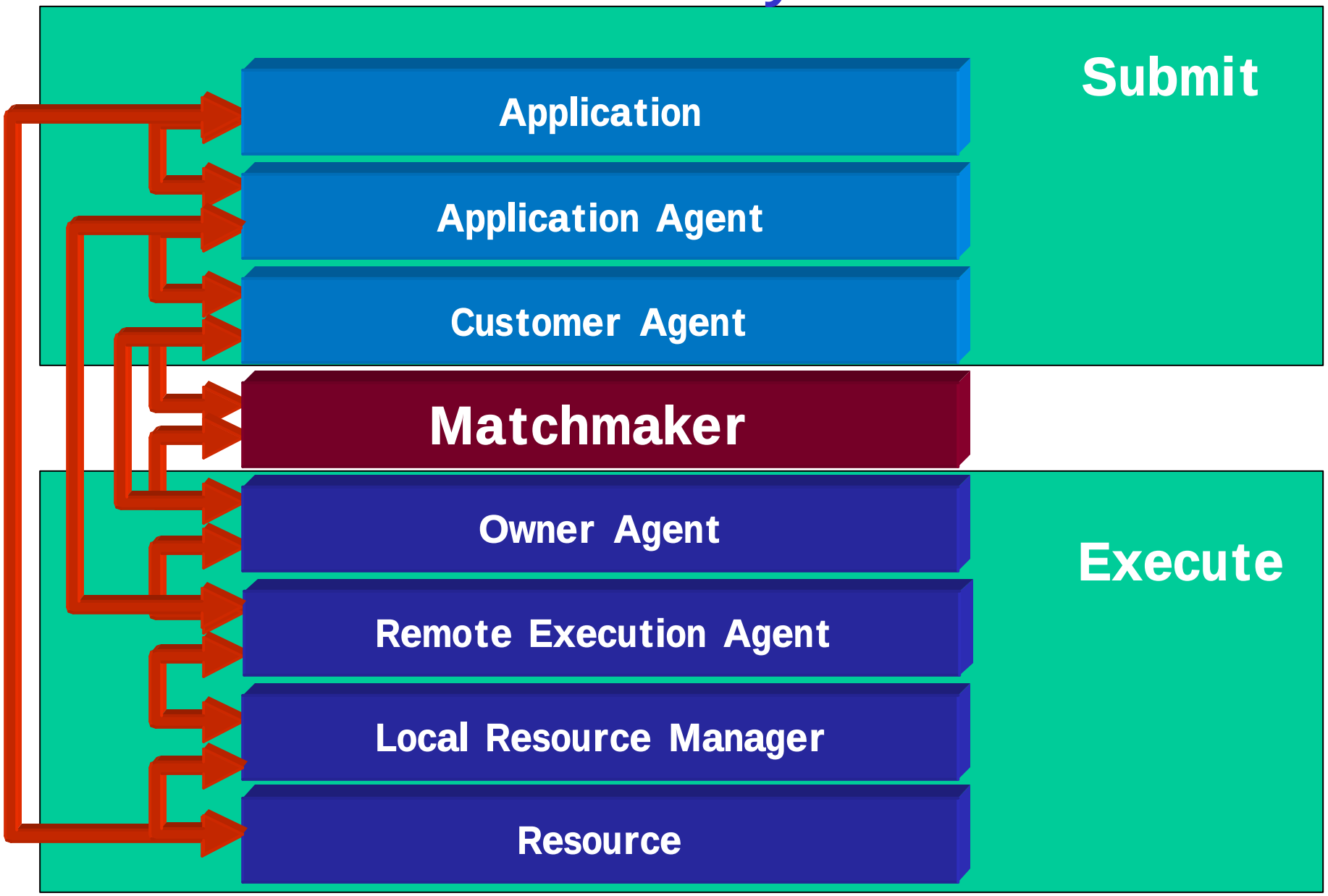
Combine the inter-domain resource management protocols of the Globus Toolkit and the intra-domain resource management methods of Condor *to allow the user to harness large collections of resources across multiple domains as if they all belong to one personal domain*.

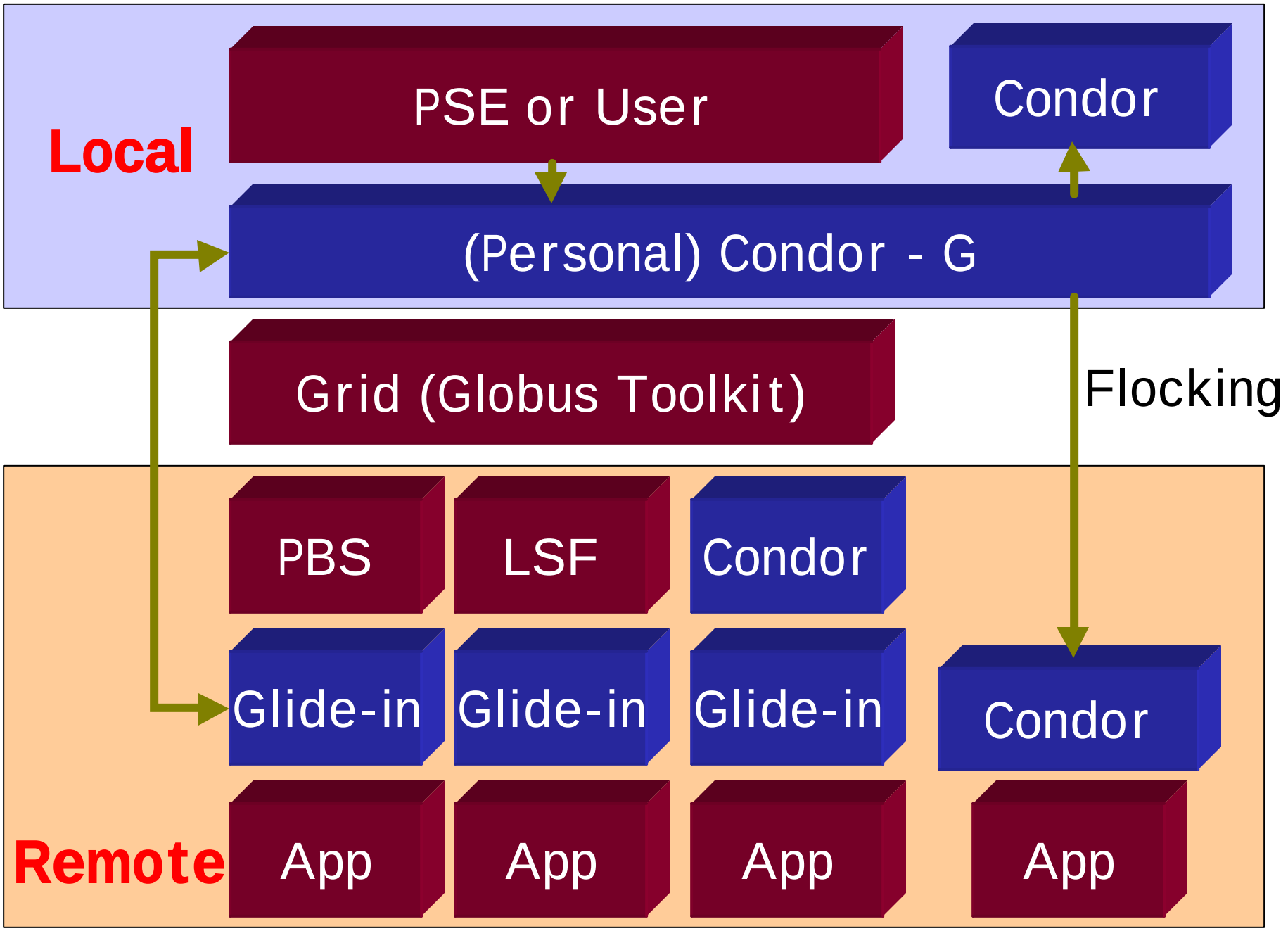


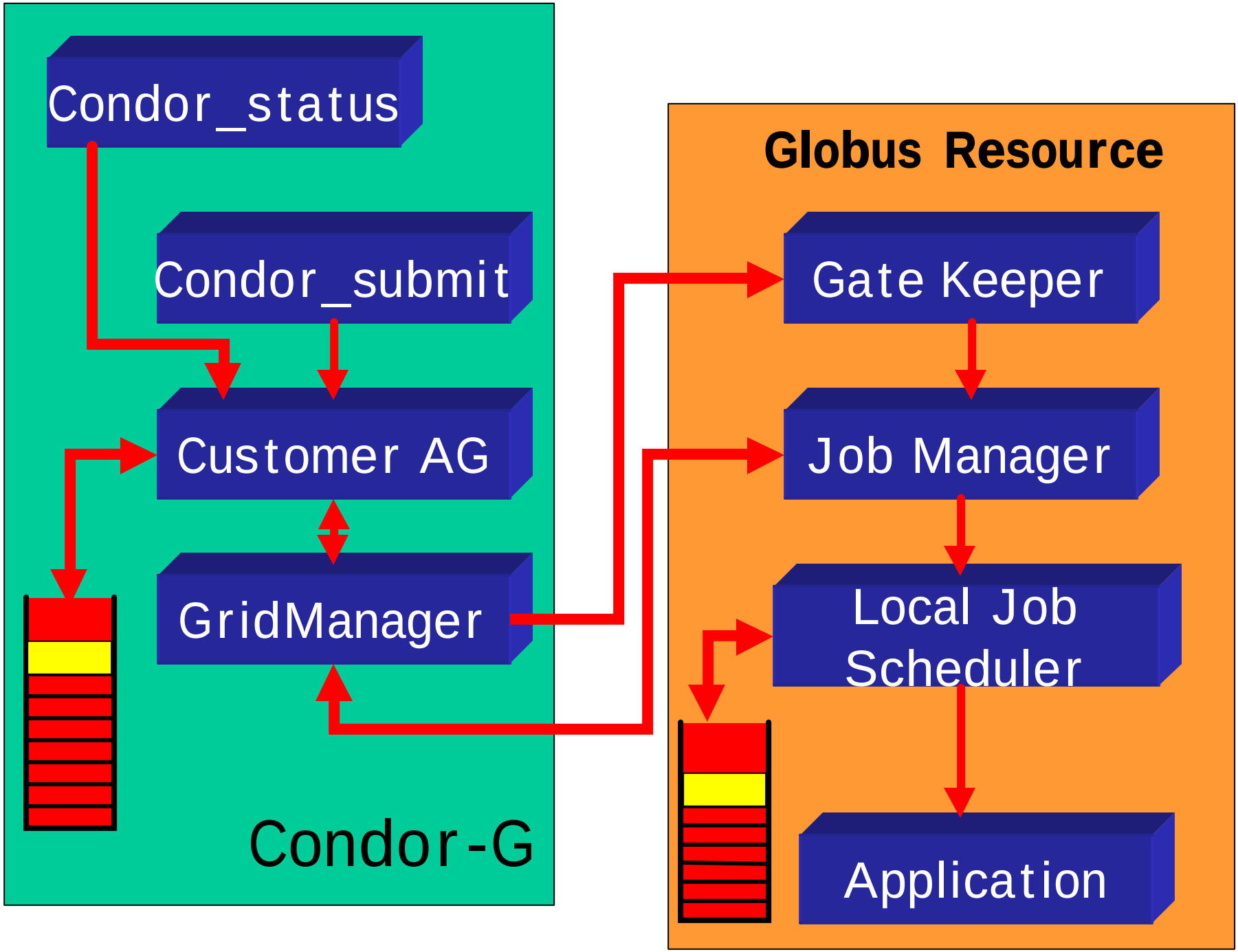
Globus Toolkit Services

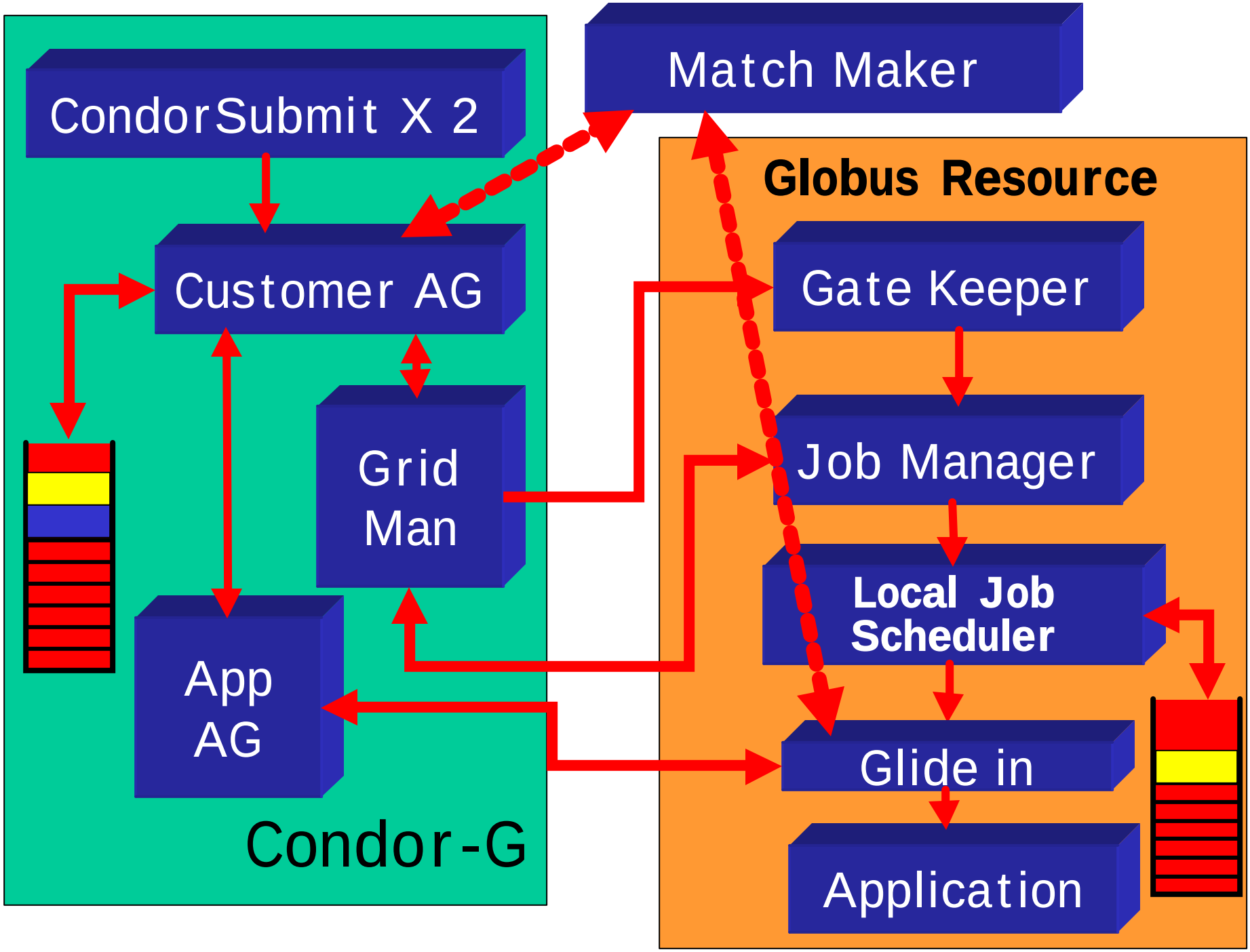
- GSI – Grid Security Infrastructure
- GRAM – Grid Resource Allocation and Management protocol
- GASS – Global Access to Secondary Storage

Condor Layers




Local
PSE or User
Condor
(Personal) Condor - G
Grid (Globus Toolkit)
Flocking
PBS
LSF
Condor
Glide-in
Glide-in
Glide-in
Condor
Remote
App
App
App
App

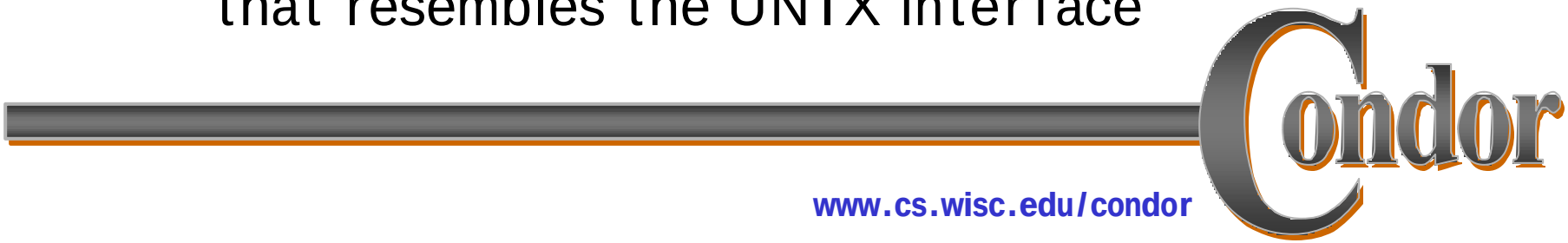

Condor_status
Condor_submit
Customer AG
GridManager
Condor-G
Globus Resource
Gate Keeper
Job Manager
Local Job Scheduler
Application

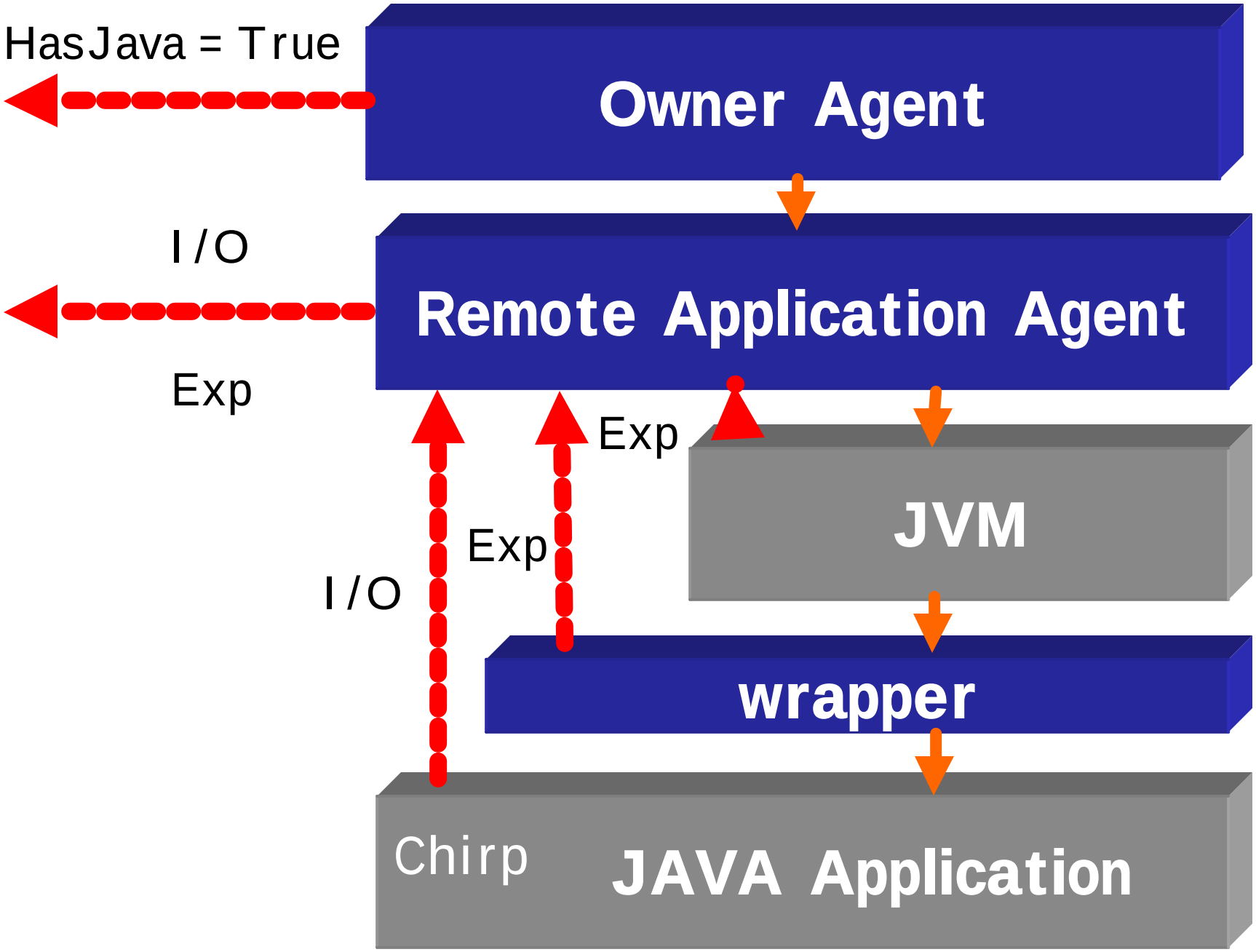

Match Maker
Condor Submit X 2
Customer AG
Grid Man
App AG
Condor-G
Globus Resource
Gate Keeper
Job Manager
Local Job Scheduler
Glide in
Application

JAVA Universe

Make Condor "JAVA Aware"

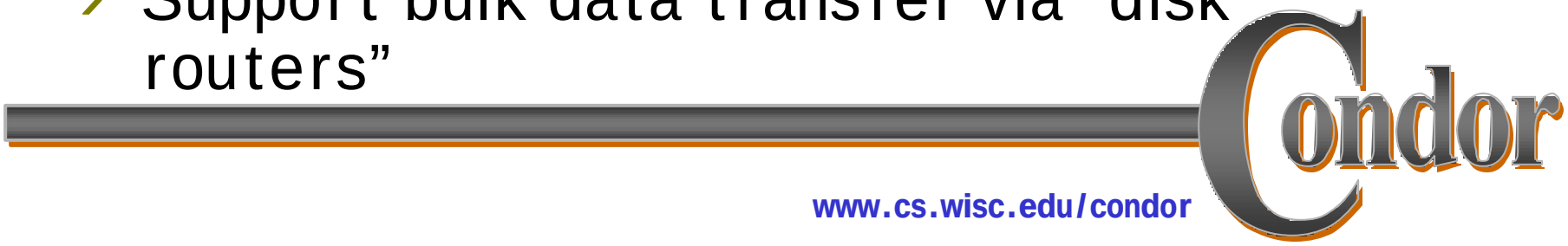
- Route jobs to "JAVA capable" resources (HasJava = TRUE)
- Intercept, identify and communicate JVM errors and application exceptions back to submission point
- Support secure I/O to remote storage via a lightweight fine-grained I/O protocol (Chirp) that resembles the UNIX interface

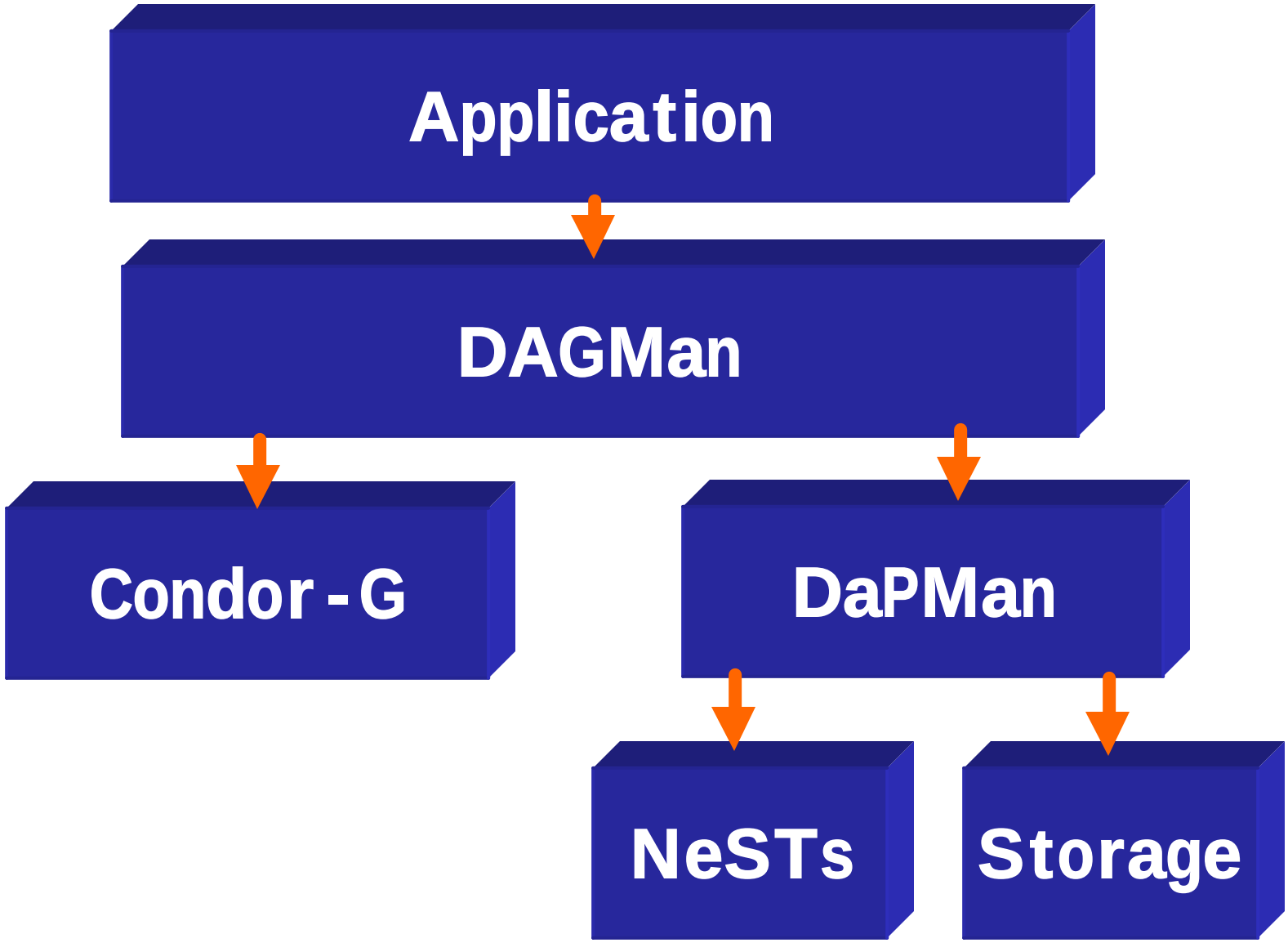



HasJava = True
Owner Agent
I/O
Remote Application Agent
Exp
Exp
Exp
JVM
I/O
wrapper
Chirp
JAVA Application

Speaking about I/O

- Continue development of NeST (Network Storage) – "lot", user, file management, file transfers POSIX access.
- Develop a framework for DaP (Data Placement) "jobs". Interface with NeST, SRB, GridFTP, ….
- Make DAGMan "storage space aware". Limit storage space consumed by a DAG.
- Support bulk data transfer via "disk routers"




Application
DAGMan
Condor-G
DaPMan
NeSTs
Storage


Do not be
picky, be
agile!!!


Condor
High Throughput Computing